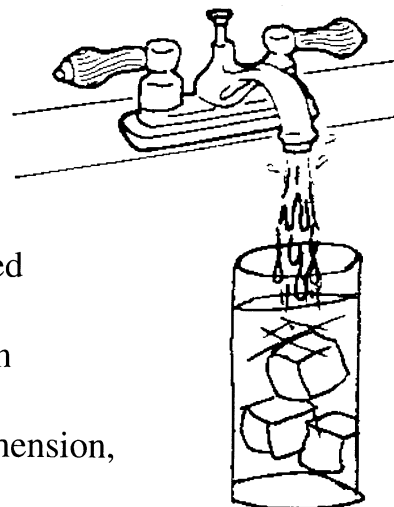


WATER QUALITY

Post-Visit Activity

| | |
|----------------------|--|
| Activity | Personal Water Use |
| Adapted From | A Ribbon of Life: New River Watershed |
| Setting | Classroom, Home |
| Duration | 30 minutes and 1-3 days data collection |
| Subject Areas | Science, Math |
| Skills | Calculations, Rationalization, Comprehension, Graphing |
| Grade Level | 2-3 |



Objectives:

Students will be able to:

1. calculate an average daily amount of water used
2. identify ways water is wasted
3. identify ways to conserve water
4. interpret and graph data

WV-IGOs:

Science - 2.45, 2.64, 2.20, 2.28, 3.29, 3.45, 3.60

VOCABULARY

natural resource

H₂O

MATERIALS

1. personal water use log and graph
2. water conservation list
3. pencil

BACKGROUND

Everywhere we look we see water. It gushes from taps, showers, and water hoses. It seems reasonable that water is the most plentiful and least valuable resource around. The reality is that water is a limited and precious resource. Water is our most valuable resource because we need it for survival. Without water there would be no life. In the United States, the average person uses 176 gallons of water per day. Our bodies are made up of 65 percent water, and we must take in about half a gallon of water every day to stay alive and healthy.

PROCEDURES

Day 1

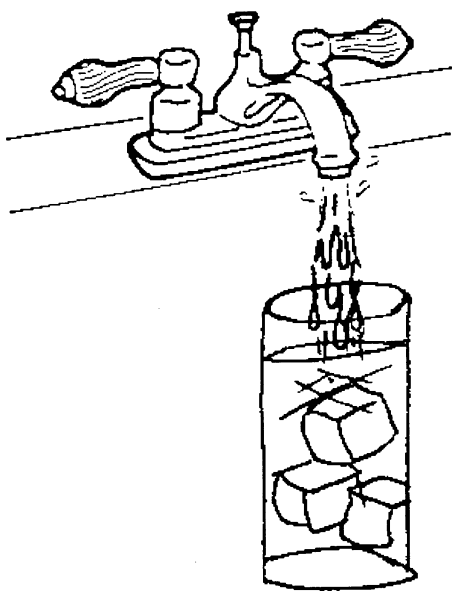
Pass out the water use log and explain to students how to keep a record of how much water they use in a 24- to 72-hour period. (A practice lesson on how to record the data and a cover letter to parents at this grade level is helpful.)

Day 2

To calculate a student's personal water use:

1. multiply column 2 by column 4 to get a total water used per activity;
2. add all figures in column 5 for a total individual use and a total family use;
3. complete steps 1 and 2 at the bottom of the log for your personal water use;





PROCEDURES *Continued*

4. have students complete the water use graph on the back of the log using their individual water use total and the lowest and highest class totals.

Day 3

1. Discuss the individual water use totals on the graphs compared to the U.S. average.
2. Discuss the amount of water used/wasted and begin a brainstorming session on ways to conserve water (see Resource Page, "Easy Ways to Conserve Water at Home").
3. Record ideas on the board or create a classroom poster.
4. Hand out the water conservation list and have a sharing time with the class. Encourage them to also share their list and what they have learned about water conservation with their family.

EVALUATION

Have the students write a pledge that includes at least one water-saving method and try honoring that pledge for one month.

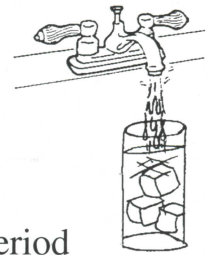
EXTENSION

The teacher can calculate a class average personal water use and construct a graph using the class average, U.S. average, class lowest, and class highest on large poster paper to display in the classroom or hallway as a reminder to students to conserve water.



WATER QUALITY

Personal Water Use Log



Directions

Complete the following chart to determine how many gallons of water are used in a 24- to 72-hour period

| H ₂ O Use activity | # of times the activity was performed | multiply | average H ₂ O used per activity | total H ₂ O used per activity |
|---|---------------------------------------|----------|--|--|
| Drinks (H ₂ O, soda milk, juice, etc.) | | X | 1/8 gal. | gals. |
| Brushing teeth | | X | 1/4 gal. | gals. |
| Washing hands | | X | 2 gals. | gals. |
| Flushing toilet | | X | 5 gals. | gals. |
| Taking a shower | # of minutes _____ | X | 8 gals. | gals. |
| Taking a bath | | X | 30 gals. | gals. |
| | | | Individual Use = | gals. |

| | | | | |
|-----------------|--|---|---------------|-------|
| Washing dishes | | X | 8 gals. | gals. |
| Dishwasher | | X | 15 gals./load | gals. |
| Cooking a meal | | X | 5 gals./meal | gals. |
| Washing clothes | | X | 30 gals./load | gals. |
| | | | Family Use = | gals. |

- To calculate your portion of the family use amount, divide family use gals. by the number of people in your family for your fraction. _____ gals.
- To calculate your personal water use total, add (individual use gals.) and your fraction from #1).

PERSONAL WATER USE = _____ gals.

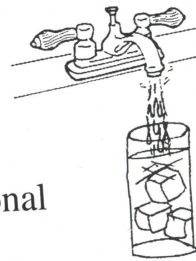


WATER QUALITY

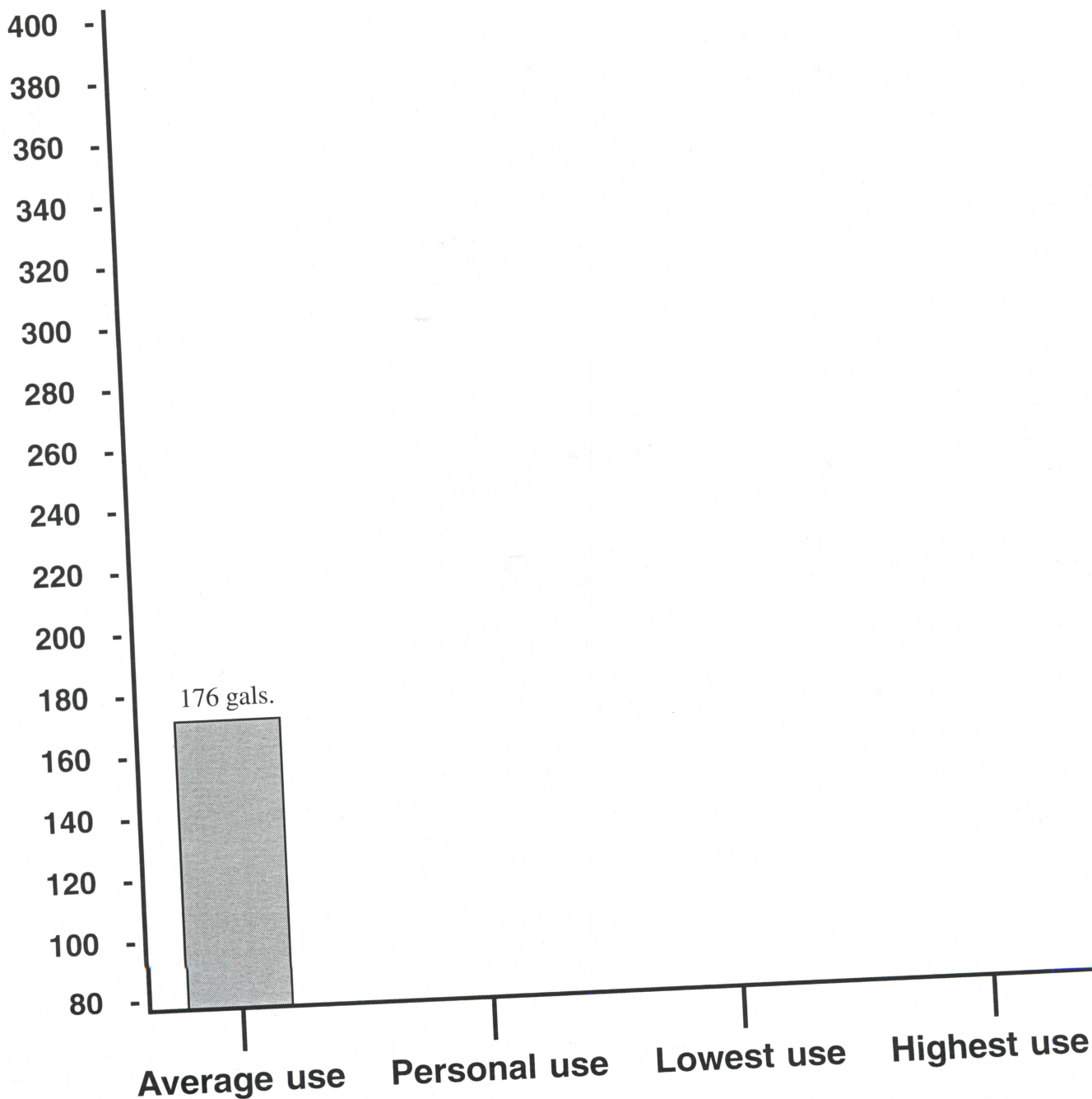
Personal Water Use Graph

Directions

Complete the following graph based on your personal water use log.

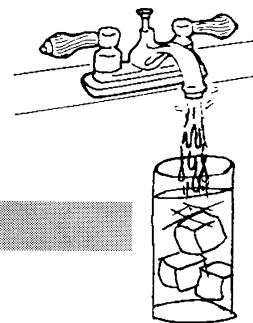


Gals.



WATER QUALITY

Resource Page



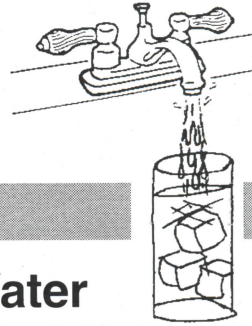
Easy Ways to Conserve Water at Home

- ✓ 1. Take short showers instead of baths. Set an egg timer for five minutes and see who can beat the clock! Offer a reward for the quickest yet cleanest shower.
- ✓ 2. Turn off the water while brushing your teeth or washing dishes.
- ✓ 3. Fill dishwashers and washing machines completely before doing a load. If possible, use an energy-saving cycle.
- ✓ 4. Fill half-gallon plastic milk jugs with water, fill partially with rocks to weight them down, and place one in the back of each toilet. You can save as much as ten gallons a day!
- ✓ 5. Collect the water that drips out of your air conditioner and use it for watering house plants.
- ✓ 6. Thoroughly clean an empty milk or juice jug. Each morning, fill it with water for drinking and put it in the refrigerator. That way you don't have to stand at a running faucet waiting for the water to cool.
- ✓ 7. Letting kids play in a sprinkler can water the lawn at the same time. On a sunny day, choose a shady area to water, or wait until evening when less evaporation will occur.
- ✓ 8. When children want to play with water, instead of letting the hose or faucet run, fill some buckets with water and give them paint brushes. They will enjoy painting everything in sight.
- ✓ 9. When washing the car, use water from a bucket and put an automatic shut-off nozzle on the water hose. This will save water while the car is being washed.
- ✓ 10. Shop around when buying new appliances and purchase a water-saving brand.
- ✓ 11. Recycle paper. Every ton of recycled paper saves 7,000 gallons of water that would be used in paper production.
- ✓ 12. Flush the toilet only when necessary. Liquid wastes are not as dangerous as solid wastes, so you do not need to flush every time there is a liquid waste in the toilet.



WATER QUALITY

Resource Page



Ten Ways to Help Stop Pollution of Our Water

- ✓ 1. Never leave your trash on a beach or throw it into a body of water such as a lake, stream, or ocean. Put it in a trash can or carry it back home with you. Your garbage can be harmful to the animals that live there.
- ✓ 2. Cut the loops from plastic six-pack rings and other plastic items before throwing them away.
- ✓ 3. Help prevent nonpoint stream pollution from excessive runoff by preserving existing trees and planting new trees and shrubs to prevent erosion.
- ✓ 4. When traveling, keep your trash together until you stop where there is a trash can. Never throw anything out the window of your car; it could end up in your water.
- ✓ 5. Inspect your septic system annually for leaks to keep raw sewage from seeping into the ground water or a nearby stream.
- ✓ 6. Have your family participate in a river or stream cleanup. Check with your local community leaders, as well as local, state, and national parks to see if they would like volunteers.
- ✓ 7. Remind your family to dispose of household toxins (window cleaners, bleach, toilet cleaner, oil-based paint, paint remover) safely rather than dumping them down the sink. One safe way is to wrap the container in newspaper, put it into a plastic bag, and put it out for the trash collector.
- ✓ 8. Try using “natural” cleaners instead of store bought ones. These can be made from simple household items, such as salt, baking soda, or vinegar.
- ✓ 9. When gardening, instead of using fertilizers or pesticides, enrich your soil with compost. These chemicals can find their way into ground water and often poison drinking supplies.
- ✓ 10. Instead of using salt to melt icy sidewalks, try cat-box litter or sand. Salt can enter and pollute the water supply.

